

2004

Amtrak® Environmental Report

Throwing the Switch:
Plans to Performance



Table of Contents

I. Letter from Vice President, Environmental Health & Safety Roy Deitchman

II. Amtrak Company Profile

III. Environmental Department Profile

IV. Amtrak's Environmental Performance

- Compliance Performance
- Environmental Management System
 - Governance
 - Environmental Audit Program
 - FACE Program
 - Training
- Capital Projects
 - Remediation
 - Pollution Prevention

V. Beyond Compliance

- Waste Minimization and Pollution Prevention
 - Green Goat Hybrid Locomotive
 - Chicago Climate Exchange
 - Chemical Task Force
- Recycling Efforts
- Division/Shop Highlights
- Awards and Recognition
- Public Involvement/Community Outreach

VI. Environmental Metrics

VII. Contact Information

I. Letter from VP Environmental Health & Safety

April 2005

Dear Reader,

We at Amtrak are proud of our environmental performance over the past year and we invite you to read all about it in our Annual Environmental Report for 2004. Amtrak continued to improve its performance in environmental management throughout 2004. With almost all of the requirements met from a 2001 Consent Decree with the US Environmental Protection Agency (EPA), Amtrak continued to develop voluntary programs to increase environmental protection. We also moved several programs from plans to actions.



During fiscal year (FY) 2004, 16 environmental compliance audits were performed as part of Amtrak's Environmental Management System (EMS). In the EPA Consent Decree period of FY01 through FY03, a major objective of the audit program was to comply with Consent Decree requirements and perform comprehensive audits at large and medium Amtrak facilities. With the audit requirements of the Consent Decree completed, new objectives and performance targets were developed, including implementation of the FACE Program and performing unannounced audits at several large and medium facilities each year.

New efforts in 2004 included the trial of a hybrid diesel-battery switcher locomotive (the "Green Goat") in the Ivy City Yard, Washington, DC; reduction in diesel fuel use to meet our commitment to reduce generation of greenhouse gases as part of our membership in the Chicago Climate Exchange (CCX); implementing a new recycling program for toner cartridges; expansion of an environmental engineering intern program with Temple University; and a full rollout of the Facility Assessment Compliance Evaluation (FACE) Program at 120 small Amtrak facilities with potential environmental impacts.

We also continued work on our environmental capital program in 2004. To further the effort to bring a "state of good repair" to all Amtrak facilities, the deteriorating former REA Building at the Sunnyside Yard in Queens, NY, was demolished. This building was an eyesore that also contained hazardous materials including asbestos debris. The environmental capital program also included upgrades for pollution prevention, such as the completion of several track pan projects, construction of new hazardous material storage buildings, and wastewater treatment plant upgrades.

Amtrak has continued to work with our stakeholders, including local, state and federal environmental agencies. We have had very constructive dialogs, which have led to voluntary pollution control programs and active solicitation of grants.

In October of 2004, the Amtrak Environmental department added the corporate safety function to our activities, along with our existing public health duties. We are now the Amtrak Environmental Health and Safety (EHS) department and hope to better integrate the EHS functions for improved environmental management. We have received excellent support from the senior executive team at Amtrak and want to especially acknowledge the continuing efforts by Mr. David Gunn, President of Amtrak, and Mr. William Crosbie, Senior Vice President—Operations. Their leadership and vision have helped Amtrak move to becoming a transportation industry success.

Sincerely,

Roy Deitchman, Vice President—Environmental Health and Safety

COMPANY PROFILE

II. Amtrak Company Profile

The National Railroad Passenger Corporation (Amtrak) is America's intercity passenger railroad company. Amtrak was formed in 1971 and its preferred stock is held by the US Department of Transportation. Amtrak is structured into seven operating divisions: New England, New York, Mid-Atlantic, Southern, Central, Southwest and Pacific.

The company owns or operates approximately 600 facilities in 46 states, including:

- Eight major operational facilities – Locomotive and coach service and maintenance facility operations: service and inspection; train washing; large fueling areas and multiple departmental functions including Engineering, Maintenance-of-Way, Mechanical, and Buildings and Bridges.
- 10 medium operational facilities – Preventative maintenance of both locomotives and coaches; minor equipment repairs; may have multiple functions on-site (but operating on a smaller scale than major facilities); fueling operations.
- Three System Shops – Typical shop activities are included under the major facilities description.
- 12 Maintenance-of-Way Facilities/Signal Shops – Facilities maintained by the Engineering Department and used to store and service equipment and materials in order to perform maintenance to track and equipment along the railroad right-of-way.
- More than 560 other facilities – Stations, substations, equipment shops, layover facilities.

In addition to these facilities, Amtrak owns more than 700 miles of track, primarily in the Northeast and Michigan. Amtrak operates on freight railroad tracks for most of the 22,000-mile Amtrak intercity network. Amtrak's corporate headquarters are located at Union Station, Washington, DC.

Amtrak employs approximately 20,000 people throughout the country. Our annual revenues and passenger trips taken over the past four years were as follows:

| Year | Passenger and Non-Passenger Revenue (in millions) | Ridership – Passenger Trips (in millions) |
|---------|---|---|
| FY 2000 | \$1,999 | 22.5 |
| FY 2001 | \$2,089 | 23.5 |
| FY 2002 | \$2,212 | 23.4 |
| FY 2003 | \$2,057 | 24.0 |
| FY 2004 | \$1,897 | 25.0 |

COMPANY PROFILE

Amtrak's primary activities and/or issues that have potential environmental impacts are:

- Asbestos Abatement
- Remediation
- Equipment/Parts Washing
- Boiler Operations
- Chlorofluorocarbon (CFCs) Management
- Painting/Stripping
- Construction Activities
- Maintenance Activities
- PCB Usage/Storage
- Storage Tanks (*Petroleum, Chemical*)
- Wastewater Treatment Systems
- Fueling
- Lead Paint Abatement
- Solvent Usage
- Locomotive Emissions
- Hazardous Chemical/Petroleum Product Usage and Storage

III. Environmental Department Profile

In a significant organizational development in 2004, the Amtrak Environmental and Public Health department merged with the Safety Department into a single entity—the Environmental Health and Safety (EHS) department—a move aimed at improving the coordination of these important and interrelated railroad functions.

The new organization is led by Roy Deitchman, Vice President of EHS, reporting to Senior Vice President, Operations, William L. Crosbie. Deitchman brings considerable occupational health and safety experience to this new position. He is a certified industrial hygienist and spent 20 years working in the Bell System's safety organization before coming to Amtrak five years ago.

The department's safety, environmental and public health functions are led by three individuals: Robert Noonan as safety superintendent; Craig Caldwell as environmental superintendent; and Vic Zare as senior director for public health standards.

The goals of the department for 2005 are straightforward: a safety goal of having no more than 3.3 injuries per 200,000 hours worked; an environmental goal of having no more than 1.2 potential violations per audit; and a public health goal of having inspection scores that are a minimum 87 percent satisfactory.

The merged organization will continue to follow the Corporate Environmental Policy, which had been revised in 2003. This policy states, in part, that Amtrak is committed to help protect the environment and that this commitment includes compliance with applicable environmental laws and regulations; compliance with Amtrak environmental policies and procedures; and the integration of sound environmental principles and practices into our business decisions and operations. This environmental commitment is based on the concepts of leadership, stewardship and compliance.

Amtrak employees are responsible for understanding and upholding the specific details of the policy. Facility and Line/Staff management are fully responsible for implementing the policy and senior and executive management are responsible for having resources available and for overseeing compliance with the policy.

The revised Corporate Environmental Policy was officially approved and enacted when it was signed by Amtrak President and Chief Executive Officer David Gunn on January 9, 2004.

IV. Amtrak's Environmental Performance

Compliance Performance

EPA Consent Decree Update

Amtrak entered into a Consent Decree in 2001 with the US Environmental Protection Agency (EPA) to resolve a series of Clean Water Act violations in the New England region. The Consent Decree was national in scope and included the following elements with highlights of the Amtrak accomplishments from 2001-2004:

- **Comprehensive environmental audits for three years**
Amtrak completed 63 audits of its large and medium facilities and potential violations were disclosed to EPA and corrected within 60 days.
- **Development of an Environmental Management System (EMS)**
A comprehensive EMS was implemented and audited by a third party in 2003 to determine its effectiveness.
- **Training of all Amtrak employees in environmental awareness**
More than 24,000 Amtrak employees completed environmental awareness training from 2001-2003.

The only remaining item open in the Consent Decree is monitoring a Supplemental Environmental Project (SEP) through 2008. This project involved improving culverts along the Long Island Sound in Connecticut—which is discussed in more detail in the following section of this report.

Culvert Project Update

The culvert improvement project that Amtrak developed as a Supplemental Environmental Project (SEP) under the 2001 Consent Decree with the US EPA was designed to benefit the hydrologic flow in salt and/or brackish marshes adjacent to seven culverts along Amtrak's Shore Line route between Branford and Stonington, CT. As part of the SEP agreement, Amtrak agreed to monitor the culvert sites through 2008 to determine if reducing the nature and extent of previous tidal restrictions would lead to environmental benefits.

ENVIRONMENTAL PERFORMANCE

Construction work on the culverts, completed over a two-year period, included repairing or increasing the height of headwalls; making other repairs or improvements to the culverts; dredging creek channels; removing silt deposits from inside culverts; and installing bioengineering materials.

The monitoring program involves ongoing evaluation of the improvements, including measuring the salinity on both sides of the culverts and assessing the vegetation at the sites.

Based on September 2004 monitoring, the seven culverts continue to demonstrate increased tidal flows when compared to conditions before the improvement project. Each of the seven culverts had equal salinities on both the Long Island Sound and upstream sides. None of the culverts appeared to have any obstructions, allowing tidal flows to reach upstream marshes. The culvert locations that have had the greatest increase in tidal flooding have also seen beneficial changes in wetland vegetation.

Environmental Incidents and Spills

In the calendar year 2004, Amtrak recorded a total of 143 environmental incidents that required corrective action and/or reports to federal, state, and/or local environmental authorities. There were also 57 additional “As Info” incidents; these incidents include those that were either not caused by Amtrak (but impacted Amtrak operations) or were adjacent to Amtrak property.

By comparison, in 2003 Amtrak recorded 96 environmental incidents requiring corrective action and/or reports to federal, state, and/or local environmental agencies. There were an additional 75 “As Info” incidents. In 2002, 88 incidents were recorded, with an additional 47 “As Info” incidents.

In 2003, the Amtrak Mechanical Department began to focus on GE “Genesis” P-42/P-32-8 diesel-electric locomotives to determine the cause and reduce the likelihood of components in the engine compartment failing and causing “internal fuel leaks” (fuel leaks inside the engine compartment with no release to the environment). These incidents continue to be reported, though there were fewer in 2004 than previous years. The Chief Mechanical Officer issued a maintenance alert in August 2003 in response to these internal fuel leaks on P-42 and P-32-8 locomotives. In 2004, there were a total of 11 internal fuel leaks involving P-42 locomotives, one of which resulted in a locomotive fire. In 2003, there were 26 such incidents, 10 of which were recorded following the distribution of the maintenance alert. In 2002, the first year that a pattern of internal fuel leaks was observed, there were 47 such incidents recorded. Thus, the number of incidents has been significantly reduced by following the new maintenance procedures.

ENVIRONMENTAL PERFORMANCE

There were a total of 21 incidents in 2004 involving hydraulic oil, primarily from Maintenance of Way (M/W) equipment. In 2003, there were 26 incidents, with 13 in 2002. One piece of M/W equipment—a tamper—was responsible for four spills in 2004, resulting in releases totaling 275 gallons. Tracking and documenting this particular tamper enabled the M/W department to remove it from service and make needed repairs. The tamper has not had any additional spills or leaks since May of 2004.

Releases from transformers accounted for five releases in 2004, compared to four in 2003 and three in 2002. One of the transformers in 2004 was on a power utility pole, which was knocked down in a collision with a motor vehicle.

Only one locomotive fuel tank rupture was recorded in 2004, involving an F-59 locomotive (exterior fuel tank under the body of the locomotive) striking debris on the right-of-way. Two fuel tank ruptures were recorded in both 2003 and 2002.

The total number of releases of petroleum products (gasoline, diesel fuel, various oils) in 2004 was 76. There were 89 in 2003 and 73 in 2002. In 2004, there were 13 fuel spills associated with fuel vendors, compared to 16 in 2003 and 12 in 2002.

There were six bloodborne or biohazard incidents in 2004, compared to five in 2003 and seven in 2002.

Of the 143 environmental incidents in 2004, 37 incidents met environmental reportability criteria and were promptly reported to the applicable environmental agencies. In 2003, there were 96 incidents, with 45 meeting reportability criteria; and in 2002 reportable incidents numbered 31 out of a total of 88 incidents.

Though the number of environmental incidents increased in 2004 compared to the previous two years (96 and 88 respectively), the number of incidents meeting reportability criteria remained about the same. The increase in Amtrak incidents is not necessarily due to the fact that there have been more incidents, but is likely the result of more accurate reporting of spills and leaks by field personnel, primarily in the Engineering and Mechanical Departments, as well as by Transportation employees in Customer Services who have received increased environmental training on spills and leaks and proper reporting. It also appears that the total volume of released petroleum products has been reduced each year as control measures are implemented and all spills and leaks are promptly reported and cleaned up.

ENVIRONMENTAL PERFORMANCE

Environmental Management System

Governance

Amtrak's Environmental Management System (EMS) is a multi-part program first approved in 1999 with a goal of making Amtrak a leader in the railroad industry in terms of environmental compliance and stewardship.

The first part of the system includes the Corporate Environmental Policy, which was revised and updated in 2003 (see Department Profile for details). The EMS also includes a comprehensive audit program and an environmental information system that features division and facility environmental manuals, annual environmental goals, and an internal environmental communication plan.

The EMS Committee Structure includes the seven-member Environmental Executive Oversight Committee (EEOC), which met four times in 2004, and the 26-member working-level EMS Steering Committee, which meets monthly. At the end of 2004 it was decided that in 2005 the EEOC and EMS would meet jointly in the overlapping months, since many participants are involved in both meetings. Each Division also has a Environmental Committee to resolve local issues.

Topics covered at the EEOC meetings included:

- Diesel exhaust emission issues and Amtrak efforts to mitigate releases.
- The Green Goat hybrid switcher trial.
- Completion of Environmental Awareness Training for 24,000 employees as part of the EPA consent decree requirements.
- Approval of the Recycling Business Case, which estimated that Amtrak could save 18 percent of trash disposal costs by separating recoverable material.
- Remediation and pollution prevention projects, especially those at the Wilmington Shops, Sunnyside Yard, Redondo Junction, and the former WR Grace site.
- Continuing implementation of the audit program and FACE evaluations.
- Recovery of \$15 million in the Paoli remediation settlement.

The EMS Steering Committee explored these issues covered by the EEOC, but at the working and implementation levels. Steering Committee members devoted a great deal of attention to reducing the number of Potential Violations per audit to be in line with corporate objectives and dealing with diesel emissions issues such as concerns about locomotive idling in Washington Union Station.

ENVIRONMENTAL PERFORMANCE

Other topics discussed at the EMS Steering Committee meetings included:

- Locomotive spill kit deployment.
- The Freon recycling alert resulting from a Sunnyside Yard environmental audit finding.
- Inkjet and toner cartridge recycling program.
- Distribution of Environmental Policies and Procedures Manuals.

Environmental Audit Program

The Environmental Audit Program is a component of the Amtrak Environmental Management System, conducted under the direction of the Amtrak Law Department, that measures performance against regulatory and management standards; reports findings of non-conformity; and devises and implements corrective action plans. The audit program currently includes 31 large and medium facilities audited on an annual (large) to triennial (medium) schedule.

During fiscal year 2004, 16 environmental compliance audits were performed as part of Amtrak's EMS. In an EPA Consent Decree period of FY01 through FY03, a major objective of the audit program was to comply with Consent Decree requirements. With the audit requirements of the Consent Decree completed, new objectives, performance targets, and criteria for success were developed for the audit program, with FY04 serving as a transitional year. The performance goal for audited facilities in FY05 was established in 2004 to be 1.20 (or fewer) Potential Violations per audit.

Three types of findings are included in the audit results: Positive Findings; Potential Violations; Management Practices. Positive Findings are operational practices and designs exceeding compliance requirements or enhanced environmental protection that promotes pollution prevention, creates efficiency, and/or reduces Amtrak risks.

The criteria of a Potential Violation (PV) finding are based on environmental law or regulation. A PV finding indicates less than full compliance with applicable requirements. Management Practices findings indicate that the facility is not fully following Amtrak standards or best business practices or policies, but the finding does not rise to the level of a Potential Violation. The following chart shows the classification of findings from the FY04 audits.

| <u>Level of Finding</u> | <u>Number of Findings</u> |
|--------------------------------|----------------------------------|
| Positive | 48 |
| Potential Violations (PV) | 50 |
| Management Practice (MP) | 91 |

ENVIRONMENTAL PERFORMANCE

The average number of PV findings per audit was 3.12, with 5.68 MP findings and 3.00 Positive Findings per audit in FY04.

Audit Findings – Systemic Compliance Issues

The EPA Consent Decree audit requirements and company environmental policy require Amtrak to identify and resolve environmental compliance issues that appear to be systemic. Systemic compliance issues discovered during FY04 included: Freon management requirements for submittal of Freon recovery certification forms to the US EPA; waste identification concerning lead-bearing waste generated at Amtrak radio repair shops.

Environmental FACE Program

The Amtrak Facility Assessment Compliance Evaluation (FACE) Program was initially rolled out at the end of 2003 (first quarter FY04). As part of the Environmental Management System (EMS), the FACE Program, which is conducted under the direction of Amtrak's Law Department, will help Amtrak assess, report and correct environmental non-conformance at Amtrak facilities and equipment locations that are not included in Amtrak's Environmental Audit Program. During the FACE Program rollout last fall, three facilities were completed and assessment protocol training was completed in several divisions. The rollout continued through the second quarter of FY04.

The FACE Program is an evolution of the Environmental Audit Program designed to assess facilities and operations that present a lower environmental risk than sites included in the Audit Program. By evaluating and managing potential environmental impacts of Amtrak operations, Amtrak reduces its environmental risk. The FACE Program covers approximately 120 facilities—including 70 substation sites in the Northeast Corridor—as compared to 31 facilities in the Audit Program. FACE protocols are less complex than the Audit Program protocols and the purpose is to assess general compliance at FACE facilities. It is anticipated that a typical FACE evaluation will take a couple of hours of on-site effort, although some sites may take a day or more to complete.

ENVIRONMENTAL PERFORMANCE

As with the Audit Program, FACE findings must be addressed with Corrective Action Plans (CAPs). Amtrak Environmental Coordinators usually conduct the FACE evaluations with support from the Division Senior Environmental Coordinator. FACE findings are reported to the facility's responsible official, who works with the Environmental Coordinator and the Environmental Department to implement the CAPs in an agreed upon time frame for completion. The responsible official is required to issue a monthly status report on the CAP until all findings are closed.

Potential Violations discovered during the FACE process must be corrected as soon as possible, but definitely within 60 days. It is anticipated that a third of the triennial FACE evaluations will be completed during each fiscal year, though substations are monitored annually.

Training

Amtrak's environmental awareness training requirement under the US EPA Consent Decree was completed in 2003. The following chart shows the number of employees who received training during the 2000-2004 Consent Decree period.

| <u>Type of Training</u> | <u>Number of Employees Trained in 2003</u> | <u>Total Employees Trained 2000-2003</u> |
|--|---|---|
| General Environmental Awareness | 10,580 | 11,076 |
| Supervisor Environmental Awareness (Engineering and Mechanical) | 126 | 621 |
| Mechanical Environmental Awareness | 1,424 | 5,394 |
| Engineering Environmental Awareness | 701 | 7,718 |
| Total | 12,831 | 24,809 |

Training continues to be an important part of the Amtrak Environmental Management System. In addition to the Environmental Awareness training courses, Amtrak has developed and delivered a number of site-specific environmental training modules, including RCRA Hazardous Waste; Air Emission Control; Wastewater Treatment; Storm Water Pollution Prevention; PCB Management; and Spill Prevention Control and Countermeasures. These training courses are a regulatory requirement at many Amtrak facilities.

ENVIRONMENTAL PERFORMANCE

The Environmental Department also offers an online awareness-training course on general spill prevention and response techniques for employees. The total number of employees trained exceeds the total number of current Amtrak employees due to reductions in staff and turnover during the four-year period.



In the area of employee development, a department workshop was held June 28 thru July 1, 2004 in New Haven, CT. The objectives of the workshop included project management, leadership and team building, and professional development training needed for environmental program implementation. Also, updates on industrial hygiene, environmental auditing, purchasing, and public health initiatives were highlighted. Professor Marian Chertow, Professor of Environmental Management, along with a graduate student from Yale University School of Forestry and Environmental Studies, presented talks on environmental metrics and greenhouse gases at the meeting.

Pictured: Environmental Workshop attendees gather at the Yale University School of Forestry and Environmental Studies

Environmental Projects

Environmental Remediation Projects

Amtrak acquired many existing railroad facilities in 1976 that had significant environmental contamination from past practices by the prior railroad owners. As stricter pollution control laws were passed in the late 1970s—and especially with passage of the Superfund Act in 1980—cleanup and remediation processes and cleanup standards were set by federal and state environmental agencies.

Amtrak owns several older facilities that have been identified as needing environmental remediation. Amtrak continues to address historic pollution problems through remediation of several sites across the country. During fiscal year 2004 (October 2003 through September 2004), Amtrak Environmental was authorized to spend approximately \$15 million for remediation projects.

ENVIRONMENTAL PERFORMANCE

The following were major projects for FY04:

REA Building in Sunnyside Yard

During calendar year 2004, Amtrak completed the demolition of the abandoned REA Building at the Sunnyside Yard Facility in Queens, NY. This 75-year old building, which was leased to a waste transfer operator, in recent years had become a potential safety and health hazard for employees because of abandoned waste materials. Prior to the demolition of the building, an extensive abatement of asbestos-containing waste materials in the building was performed.

Paoli Remediation

This project covers the remediation of PCB-contaminated soil and fuel-contaminated groundwater at the Paoli (PA) Yard site. This property is currently owned by Amtrak, but was previously operated by SEPTA, Conrail and Penn Central. Amtrak shares the cleanup costs with these organizations and will complete the soil cleanup, which has been ongoing for several years, in 2005. The groundwater remediation will be ongoing for several years.

Wilmington Shops Cleanups

Amtrak and APU, the successor to the Penn Central Railroad, signed a Voluntary Cleanup Agreement (VCA) with the Delaware Department of Natural Resources and Environmental Control (DNREC). The VCA is for the cleanup of the former fueling area at the Wilmington Shop of both oil and PCBs in soil, groundwater, and ditches surrounding the site. An additional capital project involved removing 22,000 tons of contaminated soil and debris from the Wilmington site.

Sunnyside Yard Remediation

The New York State Department of Environmental Conservation (NYSDEC) has designated this site as a Listed Inactive Hazardous Waste Site. The property is contaminated with fuel oil, lead, carcinogenic PAHs and PCBs. Amtrak and New Jersey Transit have signed an Order of Consent that obligates them to conduct a Remedial Investigation and Feasibility Study on the site (costs shared by Amtrak and NJT). Environmental engineering firms have been retained to perform remedial designs. It is likely that the investigation and remediation work will continue at this site until at least 2010.

ENVIRONMENTAL PERFORMANCE

Chicago Remediation

Several years ago, six underground storage tanks were closed and historic contamination was found to be present around the tanks. In addition, the area around a 450,000-gallon diesel fuel tank is heavily contaminated with fuel. This contamination pre-dates Amtrak operations. Amtrak is remediating these areas using a pump-and-treat system to recover oil. The State of Illinois requires ongoing sampling, monitoring and reporting.

Los Angeles Yard/Redondo Junction Remediation

Several years ago, chlorinated solvents were identified on Amtrak property and property adjacent to Amtrak's at the Redondo Junction area of Amtrak's yard in Los Angeles. The State of California issued a unilateral order to Amtrak to investigate and remediate the entire yard. Beginning in 2003, Amtrak began remedial investigations, including soil and groundwater sampling.

In addition to the above major projects, there were several other remediation projects ongoing in 2004, including remediation of substations along the Northeast Corridor, a cleanup of chlorinated solvents at the Sanford (FL) Maintenance Facility, cleanup of a fuel spill in Rensselaer, NY and asbestos abatement at a former Amtrak property in Hamilton, NY.

Pollution Prevention Projects

Amtrak's Pollution Prevention (P²) Policy provides guidance on implementing and measuring pollution prevention efforts. There has been strong support for pollution prevention projects from the Executive Environmental Oversight Committee (EEOC). Pollution prevention and waste minimization make good business sense for Amtrak in that they provide a means for cost savings, and may offer the potential for some revenue generation.

Amtrak's strategy to meet federal Pollution Prevention Act goals consist of five key areas:

- Employee Involvement
- Strategic Planning
- Tracking and Reporting
- Resource Allocation
- Technical Support

ENVIRONMENTAL PERFORMANCE

Amtrak's Pollution Prevention Program is designed to meet mandatory pollution control requirements set by the US Environmental Protection Agency and a variety of applicable federal and state environmental laws and regulations. There are pollution prevention requirements for Amtrak facilities that release waste or storm water to the environment or to publicly-owned sewer systems; for facilities that handle or generate hazardous waste materials; and for facilities that are required to have air permits when performing industrial operations.

For FY04, this program included more than \$6 million in projects in the following categories:

Track Pan Installations

Drip pan collection systems are necessary for complying with the Clean Water Act and Storm Water Permit requirements. The potential release of diesel, oils, greases and other hazardous substances into the environment can result from fueling and train washing operations. The track pans capture any spills and provide basic water treatment to remove petroleum contaminants. Drip pans were installed in Washington, DC at our Ivy City Yards and in San Diego, CA.

Upgrades to Hazardous Material Storage Facilities

Under the Resource Conservation and Recovery Act (RCRA), Amtrak must manage and control the generation and storage of hazardous waste materials. These materials are generated from operations such as fueling, spill clean-up, solvent usage, and vehicle and equipment maintenance. Amtrak is required to meet "best management practices," which can include double-walled tanks; berms or other secondary containment; alarm systems; roof cover of storage areas; and emergency response supplies. During 2004 we completed installation of a new hazardous materials storage area in Los Angeles.

Upgrades to Wastewater Treatment Facilities

Under the Clean Water Act, Amtrak must properly treat wastewater to meet either discharge standards or sewer pre-treatment standards. In many Amtrak maintenance or fueling locations, a wastewater treatment system is required to treat oily wastewater. These range from a basic oil/water separator to a complex dissolved air flotation (DAF) system. Failure to comply with environmental control requirements can lead to fines of up to \$32,500/day/incident, and potential criminal violations. As pollution control systems reach the end of their useful life, they must be upgraded or replaced. Also, regulators have added pollution control requirements at Amtrak facilities and, in some cases, water quality standards have been raised, requiring additional control measures. During 2004 wastewater treatment facilities were upgraded in Los Angeles, CA, Washington, DC, Oakland, CA, Chicago, IL and Boston, MA.

V. Beyond Compliance

Waste Minimization and Pollution Prevention

Studies show that public transportation, including train travel, has numerous positive impacts on air quality, including reducing CO₂ emissions by more than 7.4 million tons a year in the US and producing 95 percent less carbon monoxide and 92 percent fewer VOCs for every passenger mile traveled compared to private vehicles. Despite these benefits, Amtrak recognizes that diesel emissions from locomotives are a continuing area of concern throughout the country and we are taking steps to address the concerns.

For example, completion of the electrification of the final 90 miles of Northeast Corridor track from New Haven, CT, to Boston eliminated more than 30 diesel trains every day. In California, Amtrak is using low-sulfur CARB (California Air Resources Board) fuel. We have tested hybrid diesel-battery switchers and we have instituted a number of idle reduction initiatives, including turning off idling locomotives in environments over 40° F and installation of automatic stop-start devices on 80 locomotives in the next two years. In Philadelphia, we participate in a voluntary effort called the Diesel Difference Group and we're currently trialing 14 diesel trucks that use an after-treatment device to reduce diesel emissions. EHS Vice President Roy Deitchman and John Jackson of the Amtrak's Mechanical Department serve on the Association of American Railroads/US EPA Diesel Locomotive Task Force that is reviewing future emission standards for locomotives.

The following sections detail some of the projects that Amtrak has undertaken to reduce the impact of diesel exhaust emissions, as well as other waste minimization and pollution prevention initiatives.

Green Goat Hybrid Locomotive Trial

During a 60-day period in 2004, Amtrak tested a Green Goat switch locomotive to handle train makeup moves at the Ivy City Yard in Washington, DC. This was the first time the hybrid locomotive had ever been used in yard switching for a passenger railroad. The Green Goat reduces diesel exhaust emissions by more than an estimated 80 percent over conventional switch engines.

BEYOND COMPLIANCE

The locomotive is built on a used conventional diesel locomotive frame and provides a fuel-efficient power train by utilizing large banks of recyclable lead acid batteries, allowing the locomotive to operate at 2,000 horsepower (tractive-equivalent) with only a 130-hp diesel engine. That should be more than enough power to meet all of Amtrak's anticipated workloads. The unit has a maximum speed of 60 mph and features a full 360-degree view cab and a microprocessor control unit. The manufacturer of the Green Goat is RailPower, a leader in hybrid yard locomotive technologies based in North Vancouver, British Columbia.

During the two-month trial, the Mechanical Department engineer employees found that the Green Goat adequately performed all required functions, operated much quieter than existing switch locomotives, and reduced diesel fuel use by more than 70 percent.



Pictured: RailPower Green Goat

Chicago Climate Exchange

In 2003, Amtrak became a charter member of the Chicago Climate Exchange (CCX), a new enterprise that tracks, certifies and allows trading of greenhouse gases using a market-based system. Other charter members included Ford Motor Company, DuPont, Motorola and the City of Chicago.

During 2004, Amtrak could trade its carbon dioxide credits based on the 1998-2001 diesel fuel-use baseline versus projected fuel use from 2003 to 2006. As part of its participation in CCX, Amtrak agreed to reduce greenhouse gas emissions by one percent in 2003, two percent in 2004, three percent in 2005, and four percent in 2006.

BEYOND COMPLIANCE

CCX required a complete audit of both baselines and 2003 submissions by all member companies. The National Association of Security Dealers (NASD) was the third-party independent auditor for this unique process. As part of the Amtrak audit, NASD reviewed more than 4,500 fuel invoices. The Amtrak audit was completed and accepted by CCX in July 2004.

The results for calendar year 2003 indicated Amtrak reduced its diesel fuel use by about two percent from the baseline years. Thus, Amtrak was then able to bank most of its reduction and trade 5,000 tons on the CCX open market. The banked and traded credits are equivalent to the tons of CO₂ that were eliminated from the combustion of diesel fuel by locomotives.

Chemical Task Force

Amtrak's Chemical Task Force is charged with reviewing and approving potential new chemicals and chemical products. The goal is to utilize safer, less polluting, and cost-effective products for the benefit of both employees and passengers. Since 1976, the Task Force—including members from the Mechanical, Environmental Health and Safety (EHS), Purchasing, Material Control, Engineering, Diversity, and Transportation Departments—has assembled periodically to assist in the evaluation and testing of new chemicals.

Don Reilly of the Mechanical Department, having replaced the recently retired Jerry Foss, currently chairs the Amtrak Chemical Task Force. In 2004, the committee reviewed 100 chemical products. Materials covered by the Task Force reviews include adhesives; cleaners; deodorants/ disinfectants; dust/odor/snow/ice control; fire extinguishing agents; floor coatings and strippers; welding gases; lubricants; metal products; solvents; and paints.

Seventy-eight percent of the products were approved for field test and the other 22 percent were rejected as either being too toxic for the intended use or as posing potential environmental problems.

The Chemical Task Force also recommends proper use procedures; product disposal procedures; and appropriate personal protective safety equipment for approved chemical product utilization. These activities are designed to help Amtrak become a better steward of its resources and to provide a safer work environment.

BEYOND COMPLIANCE

Recycling Efforts

During 2004, Amtrak was able to implement a number of the initial elements of its comprehensive corporate-wide Recycling Business Plan. Proposed projects for the first year of the program included: initiating a simplified, system-wide waste recycling process for ink jet cartridges, toner cartridges and computers; evaluating use of new water-based cleaner and process tanks for parts cleaning at the Beech Grove Shops; implementing recommended recycling improvements at the Ivy City Yard; development of an On-the-Job Training brief on recycling; track and document ongoing recycling efforts for paper, cardboard, aluminum, plastic, newspaper, glass and other waste streams at Amtrak System Shops; seek to amend waste disposal firm contracts to require quarterly reports to Amtrak of recycling and waste disposal totals.

The recycling business plan, to be rolled out over three years, provides the basis for corporate-wide recycling (both mandated and voluntary) to help prevent pollution and reduce disposal costs. Amtrak currently spends an estimated \$6 million a year for waste management, including about \$3 million for trash disposal.

Amtrak's current recycling initiatives include on-board recycling on the Pacific Surfliner, the Southwest Chief and the Sunset Limited; station and platform recycling in Chicago, New York and Oakland; yard recycling programs in Los Angeles, Ivy City and Chicago; and office recycling programs in several locations.

The following sections provide details on some of Amtrak's 2004 recycling efforts.

Ink and Toner Cartridge Recycling

In August 2004, Amtrak initiated a new company-wide recycling program for ink jet and laser cartridges with AAA Environmental. To make recycling as easy as possible, AAA provides pre-addressed, pre-paid mailers (which can be dropped in any mailbox) or pre-paid collection boxes ready for FedEx Ground pickup. All are coded by Amtrak location. For the months of November and December 2004, Amtrak had recycled the following:

| <u>Type of Cartridge</u> | <u>Number Sent for Recycling</u> | <u>Total Rebate Received</u> |
|---------------------------------|---|-------------------------------------|
| Ink Jet | 787 | \$414.65 |
| Laser | 433 | \$494.46 |

(Note: The total number represents all cartridges sent. AAA credits Amtrak for only those cartridges deemed to be in "good condition." The rebate is for those cartridges that were able to be recycled.)

BEYOND COMPLIANCE

Ivy City Recycling Pilot Program

The Environmental Department conducted a four-day site visit in August and September of 2004 at the Ivy City Mechanical Facility in Washington, DC, in order to gain a more detailed understanding of the ways that Amtrak facilities and establishments produce solid wastes and to determine the most effective ways to prevent those wastes from occurring. The resulting pilot recycling program will involve implementing the most cost-effective recycling practices; assist with the educating and training of employees as to newly instituted waste handling procedures; and assist in establishing new contracts between Amtrak and recycling vendors. Comparative analysis of the outcomes of this program will help identify the most appropriate practices and will eventually lead to adoption of pollution prevention and waste minimization strategies that can be applied at Amtrak facilities across the nation.

Corporate-wide Results

While 2004 saw the initial implementation of Amtrak's new Recycling Business Plan, recycling has been an ongoing program in various parts of the company for many years. Following are the 2004 results from across the company for some of the most common recycled materials (as provided by the Procurement Department):

- | | |
|-----------------------|--------------------|
| • Scrap Metal | 171,485 gross tons |
| • Cable Wire | 153,885 lbs. |
| • Copper/Lead | 50,195 lbs. |
| • Used Oil | 86,805 gal. |
| • Lead Acid Batteries | 18,120 lbs. |

Division/Shop Highlights

A number of interesting and innovative environmental projects were begun or completed in 2004 at various Amtrak facilities across the country. A sampling of those projects is provided in the following summaries and photographs.

Railroad Tie Cleanup Project

During 2004, Amtrak completed the removal and disposal of more than 50,000 used railroad ties and timbers, which had accumulated along the right-of-way in the Mid-Atlantic region when ties were replaced. Because the ties are treated with creosote, there is environmental concern about residuals remaining in the used ties. Large tie piles can also be associated with large accumulations of trash and debris.



BEYOND COMPLIANCE

Coordinated by Andrew Girardi, the local Environmental Coordinator, the project was completed in two phases, including the removal of all historical piles of used ties/timbers from the site, followed by the screening and separation of the debris picked up along the right-of-way. This process saved Amtrak the cost of hauling away spoils containing stone and concrete for disposal, since the material was kept on-site and spread as clean fill throughout the yard. Salvageable materials were separated and either recycled or sold for scrap.

New Oakland Maintenance Facility

In the Pacific Division, the new Oakland maintenance facility opened with state-of-the-art environmental features such as specially fabricated metal “drip trays” designed to catch drips under the oil nozzles and diesel fuel nozzles in several locations throughout the new facility.



Pictured: “Drip trays” at Oakland, CA facility



Pictured: President and CEO David Gunn at opening of new Oakland Facility.

REA Building Demolition

In New York City’s Sunnyside Yard, our effort to bring all Amtrak facilities into a “state of good repair” included demolition of the deteriorating former REA Building. More than 15,000 tons of soil, 1,900 cubic yards of concrete, 390 tons of wood, and 350 tons of metal were removed as part of the project.



Pictured: REA Building at Sunnyside Yard prior to demolition.

BEYOND COMPLIANCE

Los Angeles Recycling

The recycling program at Amtrak's Los Angeles facilities had impressive results in 2004, with 631,913 lbs. of paper (cardboard, office paper, newspaper); 1,859 lbs. of plastic; 315 lbs. of cans; 1,302 lbs. of glass; 200 pallets; and 375 ink jet cartridges recycled. The Los Angeles Yards have a cleaning rag laundering program to reduce waste generation. They also send new, unused boxes of various magazines from long-distance trains to stations for use in the waiting rooms instead of simply throwing them away.



Pictured: Recycling bins and containers at Los Angeles Yard

Wilmington PCB Removal

Almost 20,000 tons of PCB- or petroleum-contaminated soil and debris were removed and disposed of at the Wilmington (DE) Shops. At the Wilmington Former Fueling Area, more than 13,000 gals. of PCBs have been recovered from groundwater and disposed of, with another 5,000-10,000 gals. to be recovered. Also in Wilmington, as well as at the Beech Grove Shops, parts degreasers using solvent cleaners were replaced with units using non-solvent cleaner.



Pictured: Before and after photos of site of soil and debris piles at Wilmington.



BEYOND COMPLIANCE

Awards and Recognition

Each year, the Association of American Railroads recognizes individual railroad employees who have demonstrated outstanding environmental performance in the area of environmental awareness and responsibility during the award year.

Richard Mohlenhoff, Director of Environmental Field Operations, was Amtrak's candidate for the AAR's 2004 "North American Environmental Employee Award." The candidates must demonstrate a significant and consistent role in their company's environmental program; exhibit a high degree of environmental awareness; display that awareness through exemplary work performance; be instrumental in advising fellow workers of the significance of environmental compliance and responsibility; and initiate through ideas, programs or other means an atmosphere that promotes superior environmental performance in others. They must also contribute off-duty time to activities involving on and off the job environmental efforts and identify and report environmental deficiencies, thereby preventing possible serious fines or other problems.

Rich was acknowledged for his professional attitude and his strong project management skills. Rich is Amtrak's resident expert on PCB cleanups and for more than five years has overseen the major remediation at the Sunnyside Yard in Queens, NY. In 2004, Rich provide oversight on Amtrak projects totaling almost \$7 million. In addition, the New York Division, for which Rich has responsibility for environmental compliance, averaged 86% lower than the average of all other divisions in potential violations for fiscal year 2004. Co-workers have described him as an extraordinarily talented, tireless worker.



Pictured: Rich Mohlenhoff receives his Finalist for the AAR Environmental Professional of the Year Award from Peggy Wilhide, Vice President Communications at the American Association of Railroads.

BEYOND COMPLIANCE

Dustin L. Davis, Manager of Maintenance and Equipment in Oceanside, CA, was the Amtrak nominee for AAR's "John Chafee Environmental Excellence Award." Dustin was honored as a Finalist at the Chafee Award ceremony at the US Capitol on April 21, 2004. Dustin started his Amtrak career in 1986 as a Passenger Conductor and worked his way up to Manager, Maintenance and Equipment, in the Mechanical Department of the *Coaster* commuter service in 2000. Because the position of Environmental Specialist was vacant for almost two years, Dustin took on the additional responsibilities of managing the *Coaster* facility's environmental program. When the *Coaster* facility was audited by Amtrak's Environmental Department in 2002, the report included 14 Positive Findings—the highest number of Positive Findings of any audit performed at an Amtrak-operated facility. This record-setting achievement was the result of Dustin's dedication, attention to detail, and commitment to environmental and safety best practices.



Pictured: Senator Lincoln Chafee (Rhode Island) presents Dustin Davis with his Finalist Award for the AAR John Chafee Environmental Excellence Award in a ceremony at the U.S. Capitol.

At the local level, Amtrak continued to acknowledge and recognize examples of environmental excellence from facility managers, superintendents, foremen, engineering and mechanical employees, and environmental coordinators. For example, in March of 2004, New England employee Brian Moroney, ADE, Track Department, was recognized as Emergency Responder of the Month when he pulled over at the scene of a truck accident on the Massachusetts Turnpike and used his Amtrak spill kit to prevent leaking fuel from reaching a nearby storm water catch basin.

BEYOND COMPLIANCE

Robert Noonan, Senior Director of Environmental during 2004, was acknowledged at Amtrak's President's Service and Safety Awards in the category "Sustained Excellence." These awards are the highest employee recognition at Amtrak, and pay tribute to employees who have shown extraordinary commitment and dedication to the company. The Sustained Excellence category recognizes those employees who have demonstrated exceptional overall job performance over several years. In Bob's 30 years at Amtrak he has provided outstanding leadership and support to his co-workers, has served in numerous safety, industrial hygiene and environmental positions, and was instrumental in the development of Amtrak's Environmental Management System.

In the Southwest Division, two employees were cited for environmental excellence. Eduardo Ramos, Conductor for the PSL, was dead-heading to his work assignment when the train struck debris, causing the drain valve on the locomotive fuel tank to leak. Ramos utilized the locomotive spill kit that had been recently added to Surfliner locomotives and was able to help minimize the amount of diesel fuel released. Ramos was recognized for "quick actions and willingness to go above and beyond the call of duty."

Glenn Mallott, Foreman III at the Fort Worth Mechanical Facility, was recognized for designing and building a portable sewage tank system that fits the exact needs of the facility. The unique design could be adopted for use by other maintenance facilities. Mallott's design features a 500-gallon tank constructed with non-corrosive metal and other parts that have been coated with an epoxy. When full, the tongue weight is approximately 400 pounds, which allows the tank to be pulled by a standard Taylor-Dunn electric cart.

In the Pacific Division, Jeff Fike and Michael Henderson had been involved in installing absorbent track pads at the Sacramento and Seattle facilities to capture minor releases of oil and diesel fuel from locomotives. It has been an ongoing challenge at Amtrak facilities to find an ideal way to fasten the pads down securely. Jeff Fike was recognized for devising a new way of attaching the track pads to the wood ties using Fender Washers and galvanized deck screws with unique patterns of fasteners for pads between the rails and pads on the outside of rails.

BEYOND COMPLIANCE

Public Involvement/Community Outreach

Amtrak encourages its employees to become involved in public and community-oriented activities outside of work. For example, in 2004, members of Amtrak's EHS Department participated in a wetland restoration project at the Barren Island in Dorchester County, MD. This is a particularly important issue since wetlands throughout the Chesapeake Bay region are being damaged or lost at an alarming rate as a result of coastal development, rising sea levels, and damage from non-native species.



Several times each year, the National Aquarium in Baltimore hosts wetland restoration events allowing citizen volunteers to partner in the restoration of wetlands by planting marsh grasses. These projects insure added site stability, reduce the potential for erosion, and provide habitat for wildlife. Amtrak is one of many federal, state, local and not-for-profit groups that participate.

This is the second project Amtrak has volunteered to support in conjunction with the National Aquarium. We plan to make this an annual event and will encourage additional volunteers to join us in protecting the Earth's resources.

Temple University Internships

Amtrak sponsors nine student interns from the Environmental Engineering Department at Temple University in Philadelphia who are evaluating wastewater treatment options. Two treatment options—Dissolved Air Flotation (DAF) and Ultra-Filtration—are currently used at facilities where emulsification of oily wastes is generally encountered. Since many of these systems are at or approaching their projected useful lives, it was decided to review the treatment processes with an eye toward adopting alternative treatment systems or enhancements to the current systems.

The nine Temple students were divided into two groups to evaluate the upgraded Micro-Air system at Wilmington, DE, and Ultra-Filtration at the Penn Coach Yard. Interns were also asked to examine the use of a biomass filter to replace the Ultra-Filtration system at Penn Coach Yard. Student calculations of comparative data will help Amtrak decide the best wastewater treatment choice.

BEYOND COMPLIANCE

NYC High School for Environmental Studies

In 2004, Amtrak continued to support the New York City High School for Environmental Studies, a specialty secondary school with an emphasis on urban environmental learning. Two Amtrak managers serve on the school's Corporate and Professional Advisory Council and participated in a number of events, including Career Day, an Internship Fair, in-class presentations, and installation of an urban rooftop garden on the roof of the school, which is located in Midtown Manhattan.

Other Activities

Amtrak continues to be a voluntary member of the White House Task Group on Pollution Prevention and EHS Vice President Roy Deitchman serves as an alternate industrial member of the Delaware River Basin Commission (DRBC) Implementation Advisory Committee (IAC). This group is working on the Phase II PCB Total Maximum Daily Load being developed by the DRBC, US EPA, and the states of New Jersey, Pennsylvania and Delaware. The IAC is developing an allocation system to reduce the PCB levels in the Delaware River. Amtrak has two sites—Wilmington Shops and 30th Street Yard in Philadelphia—that have been identified as storm water loading sources of PCBs in the Delaware River as a result of historic use of PCBs as an insulating oil in electric locomotive transformers.

Amtrak Environmental department employees presented two papers at the Railroad Environmental Conference held in October of 2004 at the University of Illinois. Chris LoRusso presented a paper entitled "Facility Assessment and Compliance Evaluation (FACE)," a discussion of the Amtrak environmental assessment program for small facilities. "Environmental Auditing at Amtrak: A Four-Year Trilogy 2000-2004" was presented by Roy Deitchman and Robert Noonan on the results of four years of comprehensive environmental audits at large and medium Amtrak facilities.

ENVIRONMENTAL METRICS

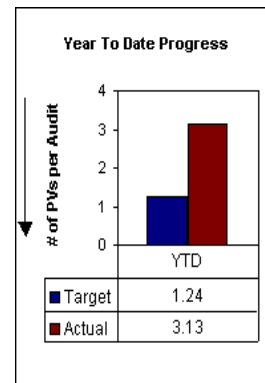
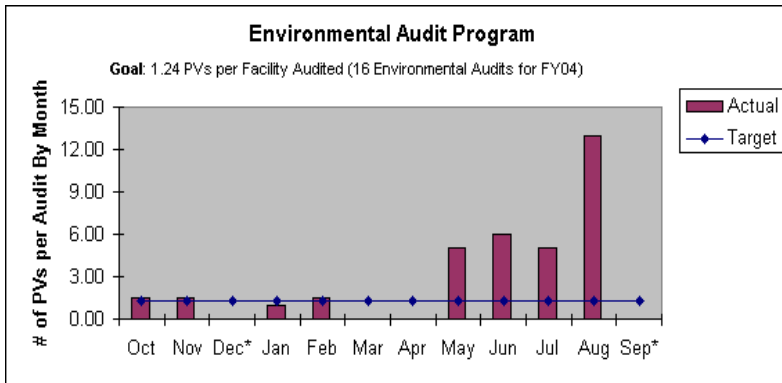
VI. Environmental Metrics

The following monthly goals were established to monitor and measure EMS implementation and the overall success of the program. The monthly goals are related to the environmental audit function, public health inspection scores, and rate of spending for capital projects. These goals are tracked monthly and presented to Amtrak's Executive Committee and Board of Directors for their review.

Environmental Goals

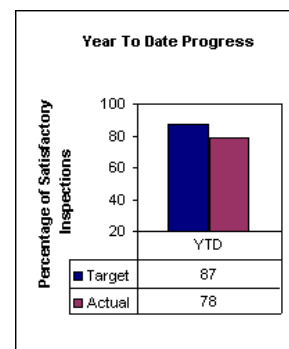
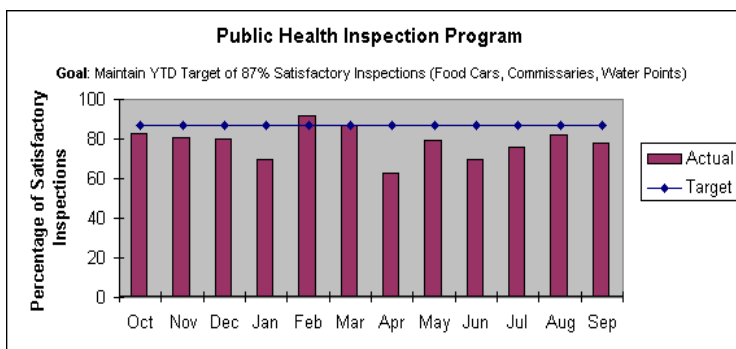
Environmental Audits

This score represents the number of potential violations resulting from the environmental audits and assessments (number of potential violations divided by the total number of audits/assessments at 150 Amtrak locations). Performed annually at large/medium facilities and every three years at smaller locations. The goal was set at 1.2 potential violations (PVs) per audit.



Public Health Inspection Scores

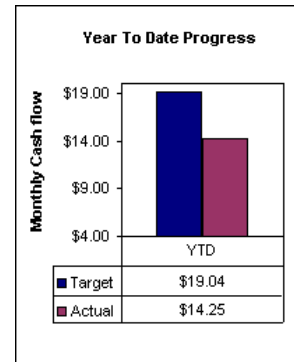
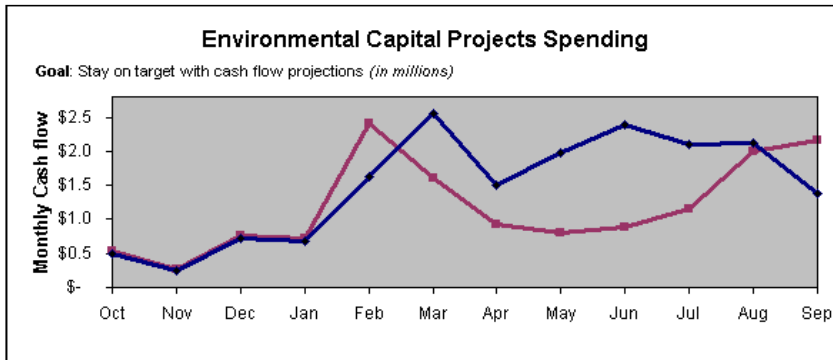
This composite score shows the percentage of Amtrak Public Health Inspections (food cars, commissaries and watering points) rated satisfactory (i.e., number of critical violations/inspection failures, divided by the total number of inspections for the month).



ENVIRONMENTAL METRICS

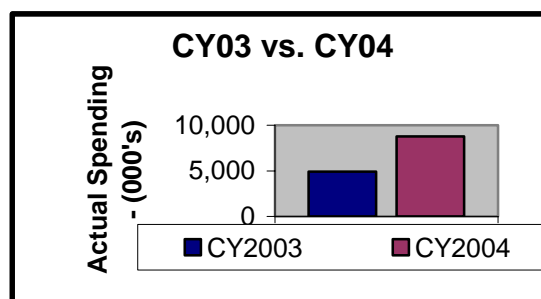
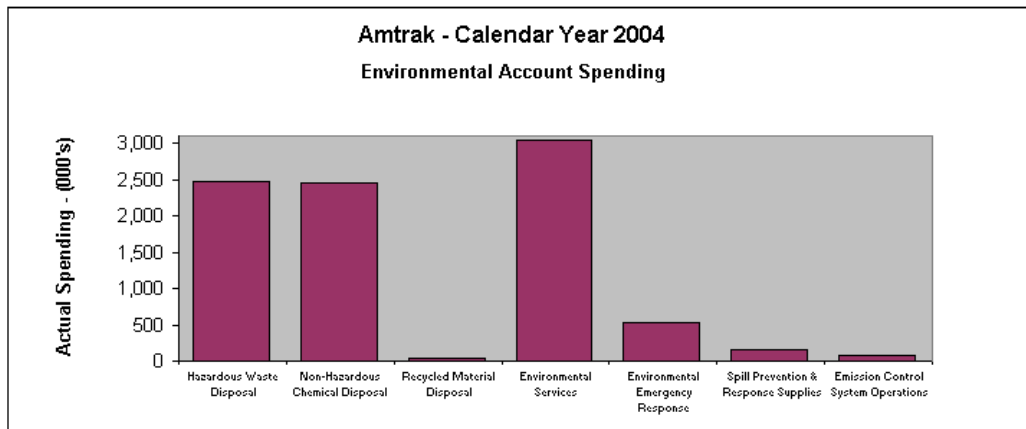
Capital Project Spending

The Environmental Department's capital budget authorization was \$19M for fiscal year 2004. The capital program can experience variances from 25 percent to 50 percent from authorization due to regulatory agencies and/or third party agreements (SEPTA, NJT, APU), which can cause significant delays.



Amtrak Environmental Spending

The following charts show the amount Amtrak spent in each of its seven environmental budget accounts and the comparative spending in 2003 and 2004.



CONTACT INFORMATION

VII. Contact Information

Environmental Health and Safety Department

| | |
|--|---|
| Vice President | Roy Deitchman 60 Massachusetts Avenue, NE Washington, DC 20002 202-906-3278 |
| Environmental Superintendent | Craig Caldwell 30 th Street Station Philadelphia, PA 19104 215-349-6968 |
| Safety Superintendent | Robert T. Noonan 60 Massachusetts Avenue, NE Washington, DC 20002 202-906-3272 |
| Senior Director, Public Health Standards | Vic Zare 60 Massachusetts Avenue, NE Washington, DC 20002 202-906-3943 |
| Senior Environmental Coordinator <i>Environmental Systems</i> | Camille Ross 60 Massachusetts Avenue, NE Washington, DC 20002 202-906-3277 |
| Director, Technical Support | Charles C. Lin 60 Massachusetts Avenue, NE Washington, DC 20002 202-906-3273 |
| Director, Policies & Programs | Lisa Mozee 60 Massachusetts Avenue, NE Washington, DC 20002 202-906-3217 |

CONTACT INFORMATION

Director, Environmental Compliance

Chris LoRusso
Two South Station
Boston, MA 02110
617-345-7738

Director, Field Operations

Rich Mohlenhoff
400 W. 31st Street
New York, NY 10001
212-630-7249

Director, Safety
Program Implementation

Michael Pollick
30th Street Station
Philadelphia, PA 19104
215-349-1308

Director, Safety
Policies and Programs

Michael Dagen
60 Massachusetts Avenue, NE
Washington, DC 20002
202-906-3280

Director, Public Health
Procedures and Assurance

John Parke
7th Avenue & 31st Street
New York, NY 10001
212-630-7295

Senior Environmental Coordinator
New England Division

Robert Graham
Two South Station
Boston, MA 02110
617-345-7534

Senior Environmental Coordinator
New York Division

Emma Cataffi
400 West 31st Street
New York, NY 10001
212-630-6215

Senior Environmental Coordinator
Mid-Atlantic Division

Jack Schweitzer
30th Street Station
Philadelphia, PA 19104
215-349-2744

Senior Environmental Coordinator
Central and Southern Divisions

Ellen Jurczak
525 West Van Buren
Chicago, IL 60607
312-880-5310

CONTACT INFORMATION

Senior Environmental Coordinator
Pacific Division

Ellen McDermott
530 Water Street, 5th Floor
Oakland, CA 94607
510-873-6151

Senior Environmental Coordinator
Southwest Division

Wade Smith
810 North Alameda
Los Angeles, CA 90012
213-683-6721

Senior Environmental Coordinator
Auditing

Andrew Girardi Sr.
30th Street Station
Philadelphia, PA 19104
215-349-2779

Senior Environmental Coordinator
Procedures and Training

Madina Alharazim
60 Massachusetts Avenue, NE
Washington, DC 20002
202-906-3209

Senior Environmental Coordinator
Environmental Engineering

Frank Sobota
30th Street Station
Philadelphia, PA 19104
215-349-1569

Senior Safety Coordinator
Mid-Atlantic Division

Alvin Richardson
60 Massachusetts Avenue, NE
Washington, DC 20002
202-906-3434

Senior Safety Coordinator
Industrial Hygiene

Henry Pauley
60 Massachusetts Avenue, NE
Washington, DC 20002
202-906-3271

Chief Safety Auditor

Kevin Grant
60 Massachusetts Avenue, NE
Washington, DC 20002
202-906-3248

Senior Public Health Coordinator

Howard Malberg
810 North Alameda
Los Angeles, CA 90012
213-683-6936

CONTACT INFORMATION

Senior Public Health Coordinator

Alfred Cooper
900 Second Street, NE
Washington, DC 20002
202-906-2602

Public Health Coordinator

Clayton Pape
525 West Van Buren
Chicago, IL 60607
312-880-5595

Public Health, Administrative Chief

William Hamlin
60 Massachusetts Avenue, NE
Washington, DC 20002
202-906-2337

Field Environmental Coordinators

Charles Bateman

8301 Cypress Plaza Drive
Jacksonville, FL 32256
904-245-6662

George Bray

Two Frontage Road
Boston, MA 02118
617-345-7827

Tami Calderon

2472 East 8th Street
Los Angeles, CA 90021
213-891-3528

Frank Claar

4001 Vandever Avenue
Wilmington, DE 19802
302-429-6458

James Eaton

3319 Earhart Boulevard
New Orleans, LA 70125
504-596-2070

Al Feeley

1401 W Street, NE
Washington, DC 20018
202-906-1317

CONTACT INFORMATION

| | |
|-------------------|---|
| Jeff Fike | 245 2 nd Street Oakland, CA 94607 510-238-4334 |
| Michael Henderson | 187 South Holgate Seattle, WA 98134 206-382-4728 |
| Bill Lowes | 202 Walter Barrick Way Beech Grove, IN 46107 317-263-0548 |
| Susan McFaul | 1400 South Lumber Street Chicago, IL 60607 312-823-3564 |
| Richard Moudy | 30 th Street Station Philadelphia, PA 19104 215-349-1867 |
| Harry Seubert | 39-29 Honeywell Street Long Island City, NY 11101 212-630-6707 |
| Pat Teeter | 788 Adams Lane New Brunswick, NJ 09802 732-940-5859 |
| Sandra Yan | 255 Welton Street, Rear Hamden, CT 06517 203-773-6313 |
| Peter Zavala | 2472 East 8 th Street Los Angeles, CA 90012 213-683-6990 |

CONTACT INFORMATION

EMS Steering Committee

| | |
|--------------------------|---|
| Craig M. Caldwell, Chair | Environmental Superintendent Environmental Health & Safety |
| Michael DeCataldo | General Superintendent New England Division Customer Services Department |
| Joseph Deely | General Superintendent Pacific Division Operations & Maintenance Department |
| Roy Deitchman | Vice President Environmental Health & Safety |
| Tommy Farr | Master Mechanic—Southern Division Mechanical |
| Mike Heffner | Master Mechanic—Central Division Mechanical |
| David Herendeen | Assistant Vice President Materials Management Department |
| Samuel A. Hill | Contract Administrator Procurement Department |
| Mike Kapela | Master Mechanic—Mid-Atlantic Division Mechanical |
| David B. Klouda | Division Engineer Engineering Department |
| Don Knapik | Master Mechanic—NY/NE Division Mechanical Department |
| Gerry Mescall | Master Mechanic—West Mechanical Department |
| Daryl Pesce | General Superintendent Mid-Atlantic Division Customer Services Department |

CONTACT INFORMATION

Richard Phelps

General Superintendent
Southwest Division
Mechanical Department

James Richter

Deputy Chief Engineer
Engineering

Donald L. Saunders

General Superintendent
Central Division
Operations Department

Lenore Slimbock

General Superintendent
New York Division
Customer Services Department

Michael Stern

Senior Associate General Counsel
Law Department

Joseph Wall

General Superintendent
Southern Division
Terminal Services Department

CONTACT INFORMATION

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